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EXAMINER	
XU, KEVIN K	

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,609	MATSUMOTO, KAZUYOSHI	
	Examiner	Art Unit	
	Kevin K. Xu	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☒ Claim(s) *13 and 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 10/727,609.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 12/5/03; 1/20/06
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Applicant is advised that should claim 13 be found allowable, claim 22 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. Specifically claim 22 is deemed to be a duplicate of claim 13 because the only distinction between the two claims is claim 22 recites "a game apparatus" in its preamble while claim 13 recites an "image processing system" in its preamble. However this distinction does not distinguish any patentable difference between the two claims. (See M.P.E.P. 2111.02) Therefore, claim 22 is objected to 37 CFR 1.75 as being a substantial duplicate of claim 13. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). Therefore one of the claims must be amended or cancelled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 7, 13-15 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Galal (6380946) in view of Dye (5909219).

Regarding claim 1, Galal teaches an object information processing apparatus (Fig. 1) for obtaining object information from input image data comprising pixels (Col lines 35-62 and Fig. 2) It should be noted that the input image data as taught by Galal is font or character data. Furthermore Galal teaches an object determination section for determining whether or not each pixel is a part of an object to be extracted. (Col 5 line 12- Col 6 line 10). It should be noted that the object extracted is the image font within a specified range and the determination criterion is based upon values of left and right fields within the proper range. (Col 5, lines 62-64) Lastly Gala teaches an object information retaining section for retaining coordinate data of the pixel as the object information if the pixel has been determined by the object determination section to be a part of the object to be extracted. (Col 6, lines 11-43). It should be noted that the object information retaining section are the control registers illustrated in Fig. 3, which are updated in process 400. (Col 6, lines 25-43 and Fig. 4) However, Galal does not explicitly teach comparing color information indicating a color of the pixel with a predetermined reference value for the object. This is what Dye teaches. (Col 3, lines 16-19, lines 25-37 and Figs. 3, 6A, 6B) It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of comparing predetermined register values with color pixel values as taught by Dye with the font determination section as taught by Galal in order to provide an embedded transparency enable bit in the destination pixel field and thus, subsequent use of the

resized image for texture mapping or other transparency operations are simplified. (Col 3, lines 11-24)

Claim 13 is similar to claim 1 except for the recitation of an image data output apparatus for outputting the image data into the object information processing apparatus and a control apparatus for controlling the object information processing apparatus and the image data output apparatus. Both of these recitations are also taught by Galal. The image data output apparatus is taught as display 144 (Fig. 1) and the control apparatus (Col 3, lines 9-18) is taught as graphics processor 140 (Fig. 1).

Claim 22 is similar in scope to claim 13 and thus, rejected under similar rationale.

Regarding claim 7, Galal teaches an object inclusion relation determination section for determining whether a pixel of the input image data which has been determined by the object determination section to be a part of an object to be extracted is a part of an already detected object or of a new object which has not been detected, and generating coordinate data of the pixel, wherein the object information retaining section retains the coordinate data generated by the object inclusion relation determination section fro each detected object. (Col 5, line 60 – Col 6, line 43) It should be noted that for the process 400 (Fig. 4), if the values of the fields are within range, then it is considered to be part of an already detected object (the process is terminated). Otherwise, the clipping process 400 proceeds and is considered to be part of a new object, which has not been detected.

Regarding claim 14, Galal teaches said image data output apparatus providing image pickup device for taking an object image and coordinate data of the object

indicating a location of the object is coordinate data on the image pickup device. (Col 5, line 60- Col 6 lines 43). It should be noted that coordinate data is shown in Fig. 2 and laction of object is explained as a predetermined address block.

Regarding claim 15, Galal teaches the control apparatus comprises a processing operation section for reading out object information stored in the object information processing apparatus and performing a processing operation for recognizing an object contained in image data (Col 2, lines 55-62)

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galal (6380946) in view of Dye (5909219) in further view of Kambayashi. (4841289)

Regarding claim 2, Galal teaches a first to an nth comparison sections for determining whether or not the color information of each pixel of the input image satisfies a fist to an nth object conditions, respectively n: natural integer. (Fig. 4). However neither Galal nor Dye explicitly teach an AND circuit for receiving n outputs. This is what Kambayashi teaches. (Col 3, lines 61-68 and Fig. 1). It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of an AND circuit for receiving integer number of outputs as taught by Kambayashi with the object determination section of Galal which utilizes the color comparison as taught by Dye in order to provide functionality such as all inputs of an AND circuit must be "logic 1" for output to be "logic 1".

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galal (6380946) in view of Dye (5909219) in further view of Trivedi. (6693643)

Regarding claim 3, neither Galal nor Dye explicitly teaches converting an UyVy value of the input image data to an HSV value. This is what Trivedi teaches. (Col 6 lines 14-19, Col 8 lines 36-59) It should be noted that it is well known in the art that UyVy is simply a popular format choice of YUV (see http://www.fourcc.org/yuv.php#UYVY) and therefore holds no distinction to YUV color space and thus conversion from YUV to HSV, as taught by Trivedi, is analogous art. It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of converting a YUV value to a HSV value as taught by Trivedi with the object information processing apparatus of Galal which utilizes the color comparison as taught by Dye because many multimedia systems must convert video and TV images (YUV color space) to computer image (RGB or HSV color space). (Col 6, lines 10-14) It should be noted that claim 3 also recites the object determination section comparing the HSV value of each pixel output. Since claim 1 recites the object determination section comparing color information and HSV is a certain type of color space, the motivation for combining object determination section of Galal with comparing an HSV value is incorporated in claim 1.

Consider claim 4, neither Galal nor Dye explicitly teaches image conversion section has first conversion table for converting an UV value of input image data to an H value, a second conversion table for converting the UV value of the input image data to an S value, and the image data conversation section outputs a Y value of the input image as a V value. This is what Trivedi teaches. (Col 36 line 65 – Col 37 line 12 and Col 54, lines 40-44). It should be noted that although Trivedi does not explicitly teach

individual conversion tables for UV to H, UV to S and Y to V, it is well known in the art that UV (chrominance) corresponds to and incorporates both H (hue) and S (saturation) and Y (luminance) corresponds to and incorporates V (brightness). Therefore, when utilizing conversion tables to convert from YUV to HSV color spaces, inherently UV would be converted to both H and S and Y would be converted to V.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galal (6380946) in view of Dye (5909219) in further view of Sasaki (6967660)

Consider claim 5, neither Galal nor Dye teaches a noise removal section for removing noise from a result of determination. This is what Sasaki teaches. (Col 5, lines 26-32 and Fig. 1) It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of a LUT conversion value that realizes removal of noise as taught by Sasaki with the object information processing apparatus of Galal which utilizes the color comparison as taught by Dye in order to reverse certain tone and the like by emphasizing or reducing brightness values within a certain area. (Col 5, lines 30-32)

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galal (6380946) in view of Dye (5909219) in further view of Sasaki (6967660) and Hyun (6144374).

Consider claim 6, neither Galal, Dye, nor Sasaki teaches a shift resistor section. This is what Hyun teaches. (Col 5, lines 56-65 and Fig. 8) It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of shift resistors as taught by Hyun with a LUT conversion value that

realizes removal of noise as taught by Sasaki into the object information processing apparatus of Galal which utilizes the color comparison as taught by Dye in order to provide input/output simulation waveforms of a shift register and utilize a clock and reset signal for data synchronization. (Col 5, lines 56-59, Fig. 4 and Fig. 8)

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galal (6380946) in view of Dye (5909219) in further view of Taylor (6967664)

Regarding claim 8, neither Galal nor Dye the said object information processing apparatus wherein the object inclusion relation determination section generates four coordinate points: coordinates having maximum X, coordinates having minimum X, coordinates having maximum Y, and coordinates having minimum Y, where coordinates of the object are (X, Y). This is what Taylor teaches. (Col 3, lines 10-25 and Figs. 2-5). It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of screen dimensions including minimum and maximum X values and minimum and maximum Y values as taught by Taylor with the object information processing apparatus of Galal which utilizes the color comparison as taught by Dye in order to scale the minimum and maximum X and Y values corresponding to the display area such that primitives whose vertices lie at least partially within the trivial discard guard band 30 (Fig. 2) are at least partially processed rather than being discarded. (Col 4, lines 29-33)

Consider claim 9, Galal teaches said object information processing apparatus wherein when a pixel of the input image data appears which has been determined by

the object determination section to be a part of an object to be extracted, the object inclusion relation determination section determines whether or not there is another pixel satisfying the same object condition, and when there is another pixel satisfying the same object condition the other pixel is determined to be a part of the object and coordinate data (X, Y) of the object is updated. (Col 5, line 60 – Col 6, line 43 and Fig. 4)

Consider claim 10, Galal teaches said object information processing apparatus wherein when a pixel of the input image data appears which has been determined by the object determination section to be a part of an object to be extracted and the object inclusion relation determination section determines that there is no pixel satisfying the same object condition, the pixel is determined to be a part of a newly detected object and information about the pixel is stored in the object information retaining section corresponding to the newly detected object. (Col 5, line 60 – Col 6, line 43 and Fig. 4 and Col 4, lines 18-56). It should be noted that when the condition of process 400 (Fig. 4) is within range, there is no pixel satisfying the object condition and thus, there is no pre-clipping and information is stored in object information retaining section.

Claim 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galal (6380946) in view of Dye (5909219) in further view of Matsumoto (5249264).

Regarding claim 11, Neither Galal or Dye teaches a plurality of object extraction conditions are provided and the object information retaining section retains a condition matching flag indicated which object condition is satisfied as part of the object information. This is what Matsumoto teaches. (Col 5, lines 32-35 and Col 9, lines 32-

40) It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of a condition flag as taught by Matsumoto into the object information processing apparatus of Galal which utilizes the color comparison as taught by Dye in order to provide for each pixel and set to the value showing "accessed" when the boundary surface is developed. (Col 5, lines 32-35).

Claims 12, 16-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galal (6380946) in view of Dye (5909219) in further view of Deering (6417861).

Consider claim 12, neither Galal nor Dye teaches said object information retaining section retains one frame of object information of an object which has been determined to be an object to be extracted. This is what Deering teaches. (Col 6, lines 12-23) It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of a graphics processor to vary sample positions on a frame-by-frame basis as taught by Deering with the object information processing apparatus of Galal which utilizes the color comparison as taught by Dye in order to store one or more sample position memories for fast access. (Col 6, lines 16-18)

Claim 16 is similar in scope to claim 12 and thus, rejected under similar rationale.

Consider claim 17, the teachings of Galal and Dye are given in the previous paragraphs of this office action. However both Galal and Dye fail to explicitly teach reading out object information and extracting on a frame-by-frame basis. However, this is what Deering teaches. (Col 6, lines 12-23) It would have been obvious to one of

ordinary skill in the art at the present time the invention was made to combine the teachings of a graphics processor to vary sample positions on a frame-by-frame basis as taught by Deering with the object information processing apparatus of Galal which utilizes the color comparison as taught by Dye in order to store one or more sample position memories for fast access. (Col 6, lines 16-18). Furthermore, Galal teaches comparing object information to detect a change of an object, as taught in the previous paragraphs of this office action. However Galal does not explicitly specify said **comparison between frames**. Nevertheless when combining teachings of a graphics processor to vary sample positions on a frame-by-frame basis as taught by Deering with the object information processing apparatus of Galal which utilizes the color comparison as taught by Dye, it would have been obvious to compare object information between frames because the extraction of object information to be evaluated is on a frame-by-frame basis.

Claim 24 is similar in scope to claim 17 and thus, rejected under similar rationale.

Consider claim 18, Galal teaches said control apparatus recognizes object moving in a predetermined direction when coordinate data of the object is changed in the predetermined direction. (Col 5 line 60 – Col 6 line 43) It should be noted that Galal teaches moving in a predetermined address amount (Block 490) and thus, a pixel address is well known in the art to contain information about location of the pixel and thus, which direction to receive. Motivation to combine with varying sample positions on a frame-by-frame basis as taught by Deering into the object information processing

apparatus of Galal which utilizes the color comparison as taught by Dye is given the rejection of claim 17.

Consider claim 21, Galal teaches the control apparatus recognizes a behavior of the object when the object is moved. (Col 5 line 60 – Col 6 line 43) It should be noted that the behavior taught by Galal is whether the sum of the left clip and right clip is less than, greater than, or equal to the maximum values of the left and right fields. However, Galal fails to explicitly teach the object having at least two colors. This is what Dye teaches. This is what Dye teaches. (Col 3, lines 16-19, lines 25-37 and Figs. 3, 6A, 6B) It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of comparing predetermined register values with color pixel values of at least two colors as taught by Dye with the control apparatus as taught by Galal in order to provide an embedded transparency enable bit in the destination pixel field and thus, subsequent use of the resized image for texture mapping or other transparency operations are simplified. (Col 3, lines 11-24) Furthermore, motivation to combine with varying sample positions on a frame-by-frame basis as taught by Deering into the object information processing apparatus of Galal which utilizes the color comparison as taught by Dye is given the rejection of claim 17.

Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galal (6380946) in view of Dye (5909219) in further view of Deering (6417861) and Katsura (6781590).

Consider claim 19, neither Galal, Dye nor Deering teaches said control apparatus recognizing that the object looming toward a viewing site when a coordinate location of

the object is not changed and a size of the object is expanding between each of a pluarity of consecutive frames in coordinate data of the object. This is what Katsura teaches. (Col 22, lines 33-40). It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of a zooming and reduction factor of a character as taught by Katsura and the teachings of a graphics processor to vary sample positions on a frame-by-frame basis as taught by Deering into the object information processing apparatus of Galal which utilizes the color comparison as taught by Dye in order to achieve a character drawing in which may be zooming applies to the X direction and reduction applies to the Y direction. (Col 22, lines 38-40)

Claim 20 is similar in scope to claim 19 and thus, rejected under similar rationale.

Claims 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galal (6380946) in view of Dye (5909219) in further view of Trivedi (6693643) and Deering (6417861).

Regarding claim 23, the teachings of Galal, Dye and Trivedi are given in the previous paragraphs of this office action. However, neither Gala, Dye nor Trivedi explicitly teaches reading out object information and extracting on a frame-by-frame basis. Nevertheless, this is what Deering teaches. (Col 6, lines 12-23) It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of a graphics processor to vary sample positions on a frame-by-frame basis as taught by Deering with the object information processing apparatus of Galal which utilizes the color comparison as taught by Dye and utilizes

converting a YUV value to a HSV value as taught by Trivedi in order to store one or more sample position memories for fast access. (Col 6, lines 16-18)

Conclusion

Any inquiry concerning this communication or earlier communications from examiner should be directed to Kevin K Xu whose telephone number is 571-272-7747. The examiner can normally be reached on Monday-Friday from 8:30 AM – 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778.

Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EB) at 866-217-9197 (toll-free).

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